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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,308	02/26/2004	Ye-Yong Kim	IK-0073	3427

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EXAMINER
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JIANG, CHEN WEN

ART UNIT	PAPER NUMBER
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3744

DATE MAILED: 02/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/786,308

Applicant(s)

KIM, YE-YONG

Examiner

Chen-Wen Jiang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 February 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12, 14-19 and 22-25 is/are rejected.
- 7) ☒ Claim(s) 13, 20 and 21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>20051121</u> .  | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-10 and 25 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Smith (U.S. Patent Number 6,377,219).

In regard to claims 1,2,5,6,7 and 10, Smith discloses a heat exchanger device for cell phone 50. Referring to Fig.3, the device comprises heat generating elements 20,22, heat exchanger 10 and heat pipe 12. The heat pipe is also used as antenna.

In regard to claims 3 and 4, Smith discloses the heat was dissipated to the case in the prior art. According to the reasoning of removing heat from the heat generating element, the dissipating heat part is opposite to the heat generating portion.

In regard to claim 8, Smith discloses heat dissipating plates 14 associated with the heat pipe.

In regard to claim 9, the heat pipe is charged with phase change material.

In regard to claim 25, controller is a heat dissipating element.

3. Claim 19,23 and 24 are rejected under 35 U.S.C. 102(b) as anticipated by Smith (U.S. Patent Number 6,377,219).

In regard to claims 19,23 and 24, Smith discloses a heat exchanger device for cell phone 50. Referring to Fig.3, the device comprises heat generating elements 20,22, heat dissipating element 10 and heat pipe 12 charged with phase change material.

4. Claims 1,11,12 and 14-18 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Newton et al. (U.S. Patent Number 6,437,981).

In regard to claims 1,11,12 and 18, Newton et al. disclose a thermally enhanced microcircuit package for cooling electronic module. Referring to Figs.3,17 and 18, the device comprises a coolant reservoir 50, a first heat exchanger 40, a second heat exchanger 42, refrigerant liquid line 48, refrigerant vapor line 47 and reservoir feed line 52. In regard to the communication module is an intended use. The microcircuit is formed in an insulated material.

In regard to claims 14 and 17, Newton et al. disclose first heat exchanger, second heat exchanger, refrigerant vapor lines and refrigerant liquid lines are form as plurality channels.

In regard to claims 15 and 16, the package comprises two layers of different material, such as glass layer and silicon layer.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Smith (U.S. Patent Number 6,377,219) in view of Chou et al. (U.S. Patent Number 6,997,241).

Smith discloses the invention substantially as claimed. However, Smith does not disclose paraffin as phase change material. Chou et al. disclose using paraffin in the same field of endeavor for the purpose as refrigerant. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the apparatus of Smith with paraffin in view of Chou et al. as refrigerant.

*Allowable Subject Matter*

7. Claims 13,20 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chen-Wen Jiang whose telephone number is (571) 272-4809. The examiner can normally be reached on Monday-Thursday from 8:00 to 6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on (571) 272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chen-Wen Jiang  
Primary Examiner

A handwritten signature in black ink, consisting of a series of loops and a final flourish, positioned to the right of the name and title.